Fossaria obrussa (Say). Cedar Bluffs, one.

Helisoma trivolvis (Say). Cornfield, Cedar Co., Neb., many.

Planorbula armigera (Say). Cedar Bluffs, one adult subfossil, also one juvenile.

Gyraulus parvus (Say). Hills west of Sisters Grove and Chalkstone Cave, three juvenile subfossils; cornfield, Cedar Co., Neb., several, mostly juvenile subfossils; Missouri River, near bridge, Yankton side, two; mouth of James River, two.

Gyraulus altissimus (F. C. Baker). Cedar Bluffs, one; species questioned.

Gyraulus umbilicatellus (Cockerell). Cedar Bluffs, one, apparently recent.

Physa gyrina Say. Marne Creek in city of Yankton, many, living; cornfield, Cedar Co., Neb., many, subfossil.

Valvata tricarinata Say. Cedar Bluffs, one juvenile subfossil.

Cincinnatia cincinnatiensis (Anthony). Mouth of the James River, two; Cedar Bluffs, several.

Amnicola limosa (Say). Mouth of the James River, one; Cedar Bluffs, many.

Sphaerium striatinum (Lam.). Marne Creek in city of Yankton, several, living.

Users of this list may also wish to consult W. H. Over's lists of South Dakota mollusks in THE NAUTILUS, Vol. XXIX, 1915, and in Vol. XLI, 1928; also Junius Henderson's list in THE NAUTILUS, Vol. XLI, 1927. None of these lists, however, have records from Yankton County or the adjacent Nebraska region. The study of these Yankton shells has been especially interesting, as in this fauna eastern and western forms are intermingled.

A PROTEST AGAINST THE USE OF "NAVICULA" FOR A GROUP OF MOLLUSCA

BY G. D. HANNA

The use of the name *"Navicula"* in place of the century-old *"Arca"* was apparently first advocated by L. R. Cox in

1927, acting upon a suggestion by Mr. J. R. le B. Tomlin. The problem has also been considered by Ralph B. Stewart, 1930, and J. Marwick, 1931. Dr. Stewart expected that the rules of nomenclature which apparently make the change necessary might be waived in this instance and it is hoped that that suggestion will be acted upon favorably.

The process of displacing the long accepted definition of *Arca* is somewhat complicated and rests upon that fruitful source of trouble, the designation of type species of superspecific groups.

It seems probable that other interpretations may be possible on the evidence thus far presented and there is no certain assurance that all of the pertinent facts have been gathered together for the case. Even so, there is some reason to doubt that the use of the name *Arca* for the last hundred years is completely invalid. I do not propose to discuss this phase of the subject further at present because my protest against the substitution of *"Navicula"* for the molluscan group is based upon other reasoning.

The largest and most common group of diatoms is known as *"Navicula"* the world over. A conservative estimate of the number of species is well over 1,000. Originally they were called "oat animals" because of the fancied resemblance of individuals to grains of oats. The genus dates from Bory de Saint-Vincent, 1822, and has *Navicula ostrearia* Bory for type species.

These organisms were considered to belong to the animal kingdom at the time the name was proposed and for many years afterwards. Even now some competent biologists believe the diatoms are a little closer to the animal kingdom than to the plants. Certain it is, they are in the border zone between the two and may be shifted back and forth indefinitely.

The use of the name *"Navicula"* for *"Arca"* will certainly promote great confusion. Much of the food of the *Navicula* ark consists of the *Navicula* diatom. The writer of an ecological paper would find it very embarrassing to be forced to make such a statement as: "One of the chief constituents in

the food of *Navicula multicostata* [the mollusk] is *Navicula multicostata* [the diatom]." A great many specific names are duplicated in the two groups.

In paleontology both organisms are often found in the same strata and reports are already in progress where it is necessary to list diatoms belonging to *Navicula* and shells which will be *"Navicula"* if the proposed substitution be accepted.

It is true that the rules of nomenclature now permit the duplication of genus-names in botany and zoology but at the time Blainville (1824) proposed *Navicula* for a group of mollusks that name was definitely invalid. The diatom genus, *Navicula* was already in use and the foremost biologists of the time considered the members of the group to be animals and so considered them for many years thereafter. Therefore, Blainville's *"Navicula"* was a homonym in scientific circles for 50 years and it only ceased to be with the gradual transfer of the diatoms to the realm of botany. Whether they will always remain so placed cannot be answered at this time. In view of the doubt it would seem to be desirable to avoid confusion if possible.

It is earnestly requested that students hold the substitution of *Navicula* for *Arca* in abeyance temporarily with the hope that the International Commission of Zoological Nomenclature may see its way clear to suspend any rules which may be necessary in order to declare *Arca* a *nomen conservendum*.

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